

## ABSTRACT

The object of the present invention is to screen and identify a novel antimicrobial protein which can inhibit  
5 the growth of plant pathogenic microorganisms at a relatively low concentration such as *Pyricularia oryzae* and *Rhizoctonia solani* causative of two major diseases causing damage to rice crops and, further, to clone the gene of this protein. According to the present invention, an  
10 antimicrobial protein which can be obtained from a fraction of an aqueous extract of *Lyophyllum shimeji* precipitated by the ammonium sulfate precipitation method, has an antimicrobial activity at least against *Rhizoctonia solani* or *Pyricularia oryzae*, and shows the presence of components  
15 of about 70 kDa and/or about 65 kDa in molecular weight in the SDS-PAGE method. A gene encoding this protein and a method of using the same are provided.